SINC - LINK

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Attention: SINC-LINK EDITOR
TORONTO TIMEX-SICLAIR USERS CLUB
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SUPER SUMMER ISSUE

and a whole lot of good stuff in between, so read on!

New for your TS2068 from LARKEN ELECTRONICS
THE LARKEN 256K RAMDISK

Finally available for the 2068 is a practical memory expansion that can be used with all 2068/Spectrum software. The LARKEN Ramdisk system is as easy to use as a tape recorder or floppy disk.

When Timex originally designed the 2068, they planned on having an expansion buss system that would allow extra memory and other peripherals such as disk, microdrives, etc., to be easily added and linked to the 2068's operating system. However, they never did complete this proposed operating system due to the cancellation of production of the TS2068. Even if they had it would not have been Spectrum compatible, so only programs written for the 2068 would work on it.

The Larken Ramdisk system consists of the LKDOS cartridge (Larken disk operating system) and a rear-mounted NON-VOLATILE memory board. The LKDOS cartridge allows you to access the Ramdisk with all the standard BASIC commands such as LOAD, SAVE, CAT, ERASE, MERGE, etc. THe LKDOS lets the Ramboard emulate a very fast floppy disk. It can load 32K in 1.5 seconds. Programs can be saved, loaded, or merged just as you do with a floppy disk, and the LKDOS keeps a keeps a catalog of all files on the Ramdisk, which is accessible by the CAT command. All the standard cassette type commands for Basic, Code, or Arrays are used. The command PRINT #4; is placed in front of the cassette type command to direct it to the Ramdisk instead of cassette, e. g. Print #4; Load "filename" SCREEN$

The memory board mounts on the rear buss of the 2068 and has a thru connector. It uses the new 32K byte static RAM chips (the 62256-lp). These cost approx $11-13 each in the US. The board comes with 64K (2 chips) but the user can add up to 6 more for a total of 256K. There are four sockets on the board so the first 128K can be just plugged in, but the second 128K must be piggybacked (and soldered) onto the back of the 1st bank. A board with 128K or 256K installed can also be supplied on special order.

The memory board is fully battery backed up by 2 'AA' batteries on the board. These will retain data for months. A special automatic Write Protect circuit protects data during power up or down. The board is very reliable and can even be removed from the computer and transported without losing data. The data on the Ramdisk is also sumchecked by LKDOS so files can be verified.

The memory board is mapped into the upper 32K of the cartridge bank. A port on the board can select 1 of 8 banks of 32K. This memory could also be used by the user to contain a AROS software program in one of the banks while not interfering with the Ramdisk operation.

The Ramdisk is fully compatible with the Larken Floppy Disk Interface and also Ramex and Oliger disk systems if they are using the LKDOS cartridge as their DOS. When used with a floppy disk system, the GOTO command is used to select the curent drive. All programs and utilities written for the floppy disk are fully compatible with the Ramdisk.

It is also Spectrum and OS64 compatible. Besides having the operating system for the Ramdisk, the LKDOS cartridge also has 10 extended commands for windows, graphics, and utilities. An NMI snapshot push button can even be added to the ramboard so any program can be added to Ramdisk with the push of a button. A program is also included to download the contents of the Ramdisk to cassette or floppy disk.

PRICES: -RAMDISK (with 64K) and LKDOS $129.95
-Memory board only for adding to existing LKDOS disk system (64K) $79.00
-Complete LKDOS storage system-400K floppy disk interface, Ramdisk (64K) and LKDOS.....$179.95

All prices are ($US), add $5 shipping

LARKEN ELECTRONICS, RR #2 NAVAN ONTARIO CANADA K4B 1H9
(613) 835 2680

A 2068 DISK INTERFACE STANDARD
by Bill Ferrabee
from Pixel Print Press-Winter

T/S computerists are well used to working with cassettes for data storage. SAVEing and LOADing programs and files using that G.E. or Panasonic recorder is old hat to the veteran T/S user.

The casette is by far the cheapest way to go. Blank tapes are easy to find, economical to buy, and simple to use.

But cassettes are SLOW. Yes, the 2068 does use a high-speed system to transmit data to/from tape. It is an improvement over the 1000/1500; but it is still not fast enough for some.

Microdrives are faster, but are not very cost-effective. Cartridges are costly, hard to find, and the system just hasn't really caught on.

The solution is disk drives. The initial cost may seem expensive when compared to cassette, but the increased storage capacity, access time, and programming flexibility makes the investment worthwhile. (Now if I could just convince my wife!)

Now arises another problem. There are a number of disk interfaces to choose from. AERCO, Oliger, Ramex; even Timex themselves have a limited run of their own disk interface.

The problem is one of "compatibility". Each company designed their "operating system" differently. A disk made on the AERCO system, for example, will not run on a Ramex system.

But Larry Kenny has come up with a solution. His LARKEN system has a well-built interface that will hold up to 4 drives.

But it is the "Extended Basic" cartridge that solves the problem. If you own an AERCO, Ramex, or Oliger interface, you can buy his cartridge, and make your system LARKEN compatable. This will allow you to share disks with other people that have LARKEN cartridges.

Finally, a STANDARD! I commend Larry on the advance he has made towards setting a T/S disk drive standard.

Lets get behind Larry on this endeavor...it could mean even better software could soon be available soon for T/S users!

Retyped from the March '88 issue of the Sinclair Louisville Users Group newsletter. There is also reference to the Timex/Sinclair/Amstrad Metroplex newsletter, which may be the original source.

QL WAYFARER BY *REGINALD COTTLE*

Because of holiday scheduling, increased work load, and family illness, it has been a number of issues since my last report.

You will be delighted to know we have had our first enquiry about the newest addition to the Sinclair Family: The Z88. Computer programmer Mr. Charles Bagnal of Level 7 Research in Toronto purchased one at Dixon's in England and is thrilled with it. He is willing to meet with anyone interested in purchasing one and give a demonstration and would like to join the club when there are members he can interact with. I told him that from all reports he might not have to wait long. His phone number can be obtained through me at anytime.

On the QL scene I recently spoke to Mr. John Gordon of Lytons who informed me that Lytons is in the process of doing a feasability study of the possibility of using three QL's for on line diagnostic system testing and monitoring.

I recently received a copy of the Quanta QL software library on disc. I understand the latest release is on 15 discs. My release consisted of 10 discs DSDD 720K per disc.

Some of the programmes had a small royalty charge attached but many are free and under the Quanta constitution can be freely exchanged between members and member groups. I would also like to thank Real Gagnon on behalf of our membership for a contribuion of freeware to our QL library. Real Gagnon is the SIN Editeur in Montreal, Quebec. He has sent us: a window designer (a utility to help design windows); a solitaire game; a caps utility that adds two new keywords to superbasic, they turn caps lock on and off; a label making program; a TRAduction programme for utilization of the TRA funcions; a swap programme for renaming devices in a programme; a blank programme to blank the screen if there is no activity for three-minutes, space reactivates the screen; a link programme to link your library of superbasic extensions and a hex/binary programme to translate hex files to binary or binary to hex. Real's disc has been updated with all the current library files and after some delay is now on route back to him with both our thanks and our compliments for his fine programming and support.

I recently received a circular from Ron Gowan of RMG outlining the content and availability of Video cassettes of the 7 seminars that took place at the Seattle Mini Fair. These seminars cover all areas of Timex/Sinclair computing from machine code programming on the ZX81 by Fred Nachbar, to programming with your QL. At $15.95 US it sounds like a resourse that no Timex/Sinclair users group should be without.

I finally received my SDSI+ floppy interface forthe QL from CST but not before I telephoned to find out why it took three months to come. I found out that the customs forms was changed and combined with the Christmas holidays it accounted for the delay. At first glance it is identical to the CST D-disc floppy interface, although on closer examination we find the board to be much more densly populated with a 36 pin connedtor for hard drive and a 26 pin for Sugart standard floppies. The interface will accept up to 8 hard disc drived and two floppies. It is designed to work with the Rodime compatible Winchester RO 652 or a Miniscrive 8425 S. Now all we need is a good inexpensive sourse for either of these drives. Anyone who knows of one can pass this information along to us all by writing to the:

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Canada
M5N 1G1

February, 1988

QL Tips: Joe E. Jenkins of Amarillo, Texas writes:

"When I finish typing in a program listing and I want to EDIT it, I ENTER EDIT and first line number. I then use the "down" arrow to advance line by line to carefully check for errors."

Bill Lawson says:"This tip is also helpful if you are using "AUTO" (for automatic numbering). Should you discover, after entering a line, that there is an error, use the "up" arrow to bring the line back into the work area, correct the error and use the "down" arrow to move to your next "AUTO" number."

J.E.J. also sends this tip: If you have a Quill program that is too long for Quill to print, save it on microdrive and then, COPY MDV1_ or 2_"filename" to SCR (for screen monitor) or MDV#_filename to SER1 (for printer). Don't forget to open a channel to SER1.

RE-INKING PRINTER RIBBONS

by George Chambers

In the March/April 1987 issue of SINC-LINK I mentioned a place in Toronto where one could get ink for re-inking printer ribbons.

I purchased a bottle of it, and since then have been trying to figure out a way of getting the ink onto the ribbon uniformly and without too much mess. Not with much success until one of our members, Tom Haller, demonstrated a successful method.

Tom found that that he could buy a small plastic ink dispenser that was made for the purpose, designed to be used with the professionnal re-inkers that you can buy for about $65 US. He purchased this dispenser for a rather nominal sum. Essentially it consists of a small plastic container with a tiny hole in the side over which the ribbon passes, absorbing ink as it goes. He suggested that a pill bottle or something similar could also do the same job.

My ribbon cassette (Smith Corona L1000 printer) is about 3 inches by 4 inches by 3/4 inch in depth. I mounted it flat on a piece of wood, holding it in place with wood strips and with a hold-down spring made out of a piece of scrap phosphor-bronze weather stripping material.

For the ink container I used an small UHU gluestick housing. I shortened the housing by cutting off the bottom section. From this discarded section I removed a small plug-like piece, and epoxied it into the bottom of the housing. This gave me a solid container with a screw-on cap. I then pierced the side of this container, about 3/4 inch from the bottom. I used one of those pins that have a small bead for a head. Used for marking maps, etc. This seemed give about the right size hole. Actually I tried melting the hole by heating the pin with a match. A mistake, because the pin started to melt the plastic, and threatened to ruin the hole. The edge of the hole may be rough from the process. Smooth it off so the ribbon will pass snugly over the hole.

This made-up ink container has to be secured to the baseboard,vertically, in such a way that the centre of the ribbon will pass over the hole in the container. I drilled a hole in the base-board to hold the ink container in a vertical position. I placed it such that the ribbon made a detour of about 3/4 inch from it's normal path, to pass over the side of the container. This seems to hold the ribbon against the container sufficiently, without undue drag.

I found that the hole I made in the base was a loose fit, so I mixed up some epoxy glue and sandpaper dust, and made the hole a snug fit for the container. This is a bit tricky, though. For convenience you want to be able to remove the container from its recess. At the same time you want it to be secure in position while inking. If you are not careful you will glue it in there permanently. Putting a piece of paper around it, or coating it with grease should prevent this from happening. (There are other ways you can secure the ink container .....use your imagination)

You may need to shift the ink container up or down so that the ink hole is centred on the ribbon. In my arrangement the container is a sort of press fit, so it stays put yet is readily shifted as necessary.

The ribbon cassette has a small finger knob which is used to move the ribbon. I made up a small crank out of piano wire (craft shops carry this) and use it to crank the ribbon past the ink. I contemplate using a variable speed drill to drive the ribbon. I shall try using a piece of coil spring as a coupling between the drill and the cartridge knob.

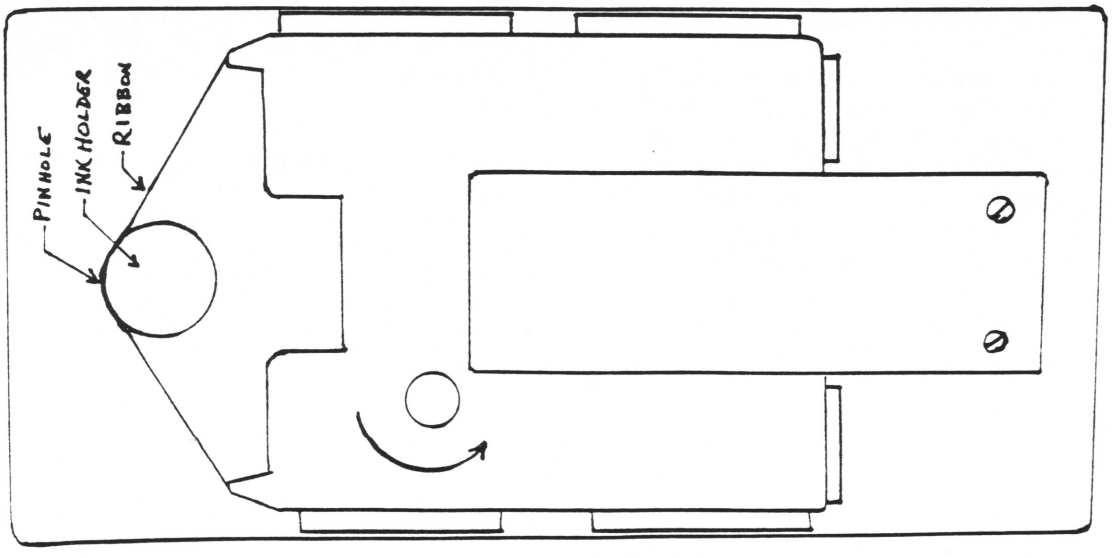
In the article mentioned above I said:

"Ink will cost you $8 a bottle...good for anywhere from 10 to 60 applications, depending on the ribbon. ABBA COMPUTER CORPORATION is in Markham, Ont., at 21 Amber St., Unit 4, Phone (416) 477 4033."

Times have changed. Ink now costs $9. ABBA are still at the same location and phone No.

****

RIBBON INKER



SincBits
Ian Robertson

UPDATES: I wish to thank Tom Bent for pointing me in the direction of the NEC P2200 24 pin printer. It is a great printer and seems to work well with the QL, 2068 and the Spectrums. It will probably work with the ZX-81, if I had enough energy to try.

TS2068: Rumour has it that JOHN OLIGER has completed his last upgrade for the JLO SAFE DOS. It is v2.5 and has the long awaited ERASE command. Good news to this sloppy user.

SPECTRUM: This item should really be in the UPDATES section, but is so important that it deserves to be featured. The news is - the SPECTRUM CLONE, now codenamed SAM is fast becoming a reality. So says Simon Goodwin in the latest issue of CRASH. He has seen and used the hand built prototype system at MILES GORDON TECHNOLOGY, MGT for short. It runs all the software tried to date (although some do suffer slightly). The specs are interesting. It uses a 6 MHz Z80B, has a 48 key keyboard, 32k ROM, freely mappable 8x16k pages of RAM and the built-in ports include RGB/SCART, composite video, PAL UHF TV, light pen, cassette (2250 baud), network, MIDI in/out, joystick/mouse, ROM/Spectrum parallel bus. The sound chip will probably be the AY-3-8912, although the MGT favourite is the YAMAHA SA1099 stereo chip with an eight octave range, which can play up to six notes and two noises at the same time. MGT (manufacturers of the DISCIPLE and the PLUS D disk drive interfaces) have designed a disk interface into the SAM logic array and will be bringing out a 3.5" 1560k compatible drive soon after the launch of the SAM. The SAM and the drive will retail for £99.00 (sterling) each. If it were not for Simon's column, CRASH would be just that.

QL: Lots of activity in this section, again. The most important item, to a dedicated QL user, is the news that A+ may be selling their entire QL inventory to an offshore buyer. To add to this gloomy scenario, most QL dealers seem to be either almost or entirely out of stock. Sure am glad I bought one of those $99.00 specials as a spare! Now for some brighter news. If you like QUILL v2.21/v2.3, then you will LOVE v2.35 with both TURBO + and SPEEDSCREEN. It kind of sneeks up on you. At first you do not realize that it is working better/faster, as it just appears to work as you think it should. That is the secret. It works just the way QUILL should have in the first place. I just received TEXT87 and am presently having problems getting it to work. Hopefully I will be able to report on it next issue. SHARPS are now selling a companion disk interface to the TRUMP CARD. It is called the ACE CARD and comes with all the goodies of the TC except it only has 256k memory and not the gigantic 768k of the TC. The good news (again good news) is that it costs $90.00 less than the TC, or $229.96 US to those counting. If you are a QL user and do not subscribe to one of the three dedicated QL magazines, you are missing out. The QL market is booming (well almost booming), at the moment, with new software and hardware items offered almost every month. If you want to continue to use your QL as a serious computer, then you should stock up while you still can. My wife thinks I can hold out to the year 2000.

CARTOONING WITH THE 2068

by G. NELSON ROBINS

I am a newcomer to the world of computers as well as being a newcomer to the club. The first thing I found out when talking to different people about their computer is that they set out to have it do something especially to suit their taste, whether it be programming games to running a business. We all want our computers to do something to make our lives a little easier as well as give us entertainment.

I am no exception to the rule. My major interest has always been in the field of animation, but especially cartooning. I was disappointed when upon reading the manual, it contained only a short paragraph on animation and nothing whatsoever on cartooning. Thus I hunted for books on these subjects. I found lots of books but very few could be used with the 2068. Lacking the programming skills, I was ready to throw in the towel. Until I joined the club and started using the tape library. I was very fortunate when one of the members loaned me some back issues of TIME DESIGN. Now I was able to find books as well as programs for my 2068!

My biggest break came, I would have to say, when I obtained a program called ARTWORX. I was finally on the road to doing some serious cartooning.

First off I had to decide on something or someone to turn into a cartoon. I decided on using Mr. Spock. Finding a fairly clear photograph to guide me in my venture, I started creating Mr. Spock with the help of ARTWORX. I found I used the zoom feature the most. This was easier to control than using the brush feature, especially for the eyes and the structure of the mouth. I had one problem with the program. I found the joystick kept returning to the main menu and this, at times, was very frustrating. Switching to the keyboard didn't totally solve the problem but helped to make drawing much easier. STEP #1 shows Spock in his rough stage.

STEP #2 shows what I obtained by using grey-scaLing. Unfortunately ARTWORX does not have this function. There is another program available through a magazine called BYTE POWER (an ad for BYTE POWER can be found in the latest issue of TIME DESIGN). BYTE POWER is a magazine entirely on tape and what is good about this is that the programs are all ready to run. No listings whatsoever to type in! Their programs range from games (most of which are in machine code) to utilities for improving the 2068, as well as your business. The program I used for my grey-scaling is called SSP (Small Screen Picture) and is found in the Sept 1986 issue. I use grey-scale as border, for shading and as well to add more detail to Spock's face. The arrow is used to place the grey-scale. Note: make sure there is no area for the grey-scale to bleed through. It's best to do a once-over with zoom and close any areas. Also, instead of using the joystick for menu calls, SSP uses the space bar. No more accidental menu calls!

STEP #3 shows how I created speech bubbles using the circle feature, clearing any unwanted overage. Inside I then placed what I wanted Spock to say. My final touch was to create a caption. SSP uses two lettering fonts, the normal black on white and white on black. I used the white on black for my caption.

Now I have a completed cartoon frame, showing that it is possible to create cartoon frames and even a full comic strip with your 2068.

STEP #1
(ROUGH DRAWING)

STEP #2
USING
GRAYSCALE

STEP #3

BOB'S NOTEBOOK

TASWORD TWO PATCHED (AGAIN?)

When are people going to stop fooling around with Tasword? Probably never and more power to 'em. There are some very good ideas floating around from those who have a go at making a "good" program "better (?)". I have taken some of them, added a few of my own and here is my patch which I call version 4.2.

1. This change is one that should have been in from the beginning. It simply reactivates the TS2040 printer after each return to the text file (Line 10) by POKING 26703,0:26704,5. These pokes are changed each time you select the wide printer mode.

2. I've included a word count which appears each time you call the STOP menu; it appears right after the edit line option. This code starts at 33100 and is 88 bytes long. More about this later.

3. There is an option for saving the AUTOSTART boot of this version; this assumes you have the Larken LKDOS (Line 9000).

4. Then I show a routine to allow for the changing of the text PAPER and INK colours to suit your taste and that of your monitor (Line 9100). This would seem like a one time facility but it takes a few tries to get your choice just right. For example, I used the following:

Area	PAPER	INK
Text	0	7
L&R Margin	1	7
Bottom Screen Top Line	5	0
Bottom Screen Bottom Line	0	5
64 column Border	1	
32 column Border	6	

When you get it right, GO TO 9300 and SAVE your new version of taswo.C2.

5. The LOAD text option brings up the catalogue (CAT) of the LKDOS disk to remind you what texts are available so that you may LOAD the text of your choice. NOTE: The ENTER prompt in this program is INPUT LINE a$ which eliminates the quotes around the INPUT cursor. This neat trick prevents your accidentally EDITing out the quotes which usually messes up the INPUTing.

6. The PRINT OPTION menu will present you with the choice of setting the Line spacing (eg, double for draft copies,) the left margin and other regular options.

7. The SAVE routine at Line 1000 has been reworked to bring up the catalogue as for LOAD and the error traps have been simplified.

8. If you don't have the code for wordcount (wrd.C2), here it is and load it to start at 33100 (814Ch).

```
814CH  00 82 00 00 00 E4 09 CD
8154H  E0 81 C5 D5 E5 3E 00 01
815CH  00 01 11 00 00 2A 4C 81
8164H  7E FE 20 28 25 3E 40 B8
816CH  20 03 13 00 00 0E 01 3E
8174H  40 B8 20 02 06 00 04 7C
817CH  FE CD 20 0B 7D FE 00 20
8184H  06 18 14 00 00 00 00 23
818CH  18 D6 3E 01 B8 28 04 B9
8194H  20 01 13 0E 00 18 D8 62
819CH  6B 22 51 81 E1 D1 C1 C9
```

9. To sum up: Type in the tasword listing and load your tasword code to address 54784 as usual. Then do the colour mod and save tasword code as taswo.C2 same address same length. Save wrd.C2. Save the Autostart. Then clear the 2068 and boot up tasword per LKDOS instructions. Best of luck!

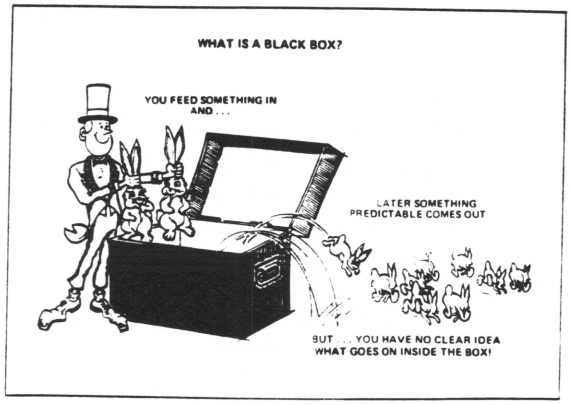
10. Personally, I'm going to work on Version 4.3 which will eliminate the colour routine, the autostart SAVE and insert some new stuff.

Bob Mitchell
871112

```
  1 REM Tasword Version 4.2
      RH Mitchell
  2 REM 871112
  3
 10 RANDOMIZE USR VAL "100": OP
EN #4,"dd": POKE VAL "23658",NO
T PI: POKE VAL "26703",NOT PI:
POKE VAL "26704",VAL "5": PAPER
 VAL "7": INK VAL "9": BORDER V
AL "7": CLS : LET a=USR VAL "64
330": GO TO VAL "20"
 15 POKE VAL "23609",VAL "2": C
LEAR VAL "33099": RANDOMIZE USR
 100: LOAD "wrd.C2"CODE : RANDO
MIZE USR 100: LOAD "taswo.C2"CO
DE : CLS : LET a=USR VAL "59081
": GO TO VAL "10"
 20 CLS : LET fs=VAL "6000": LE
T th=VAL "31": LET a=VAL "64"*I
NT (a/VAL "64"+VAL "0.99"): IF
a=NOT PI THEN  GO TO VAL "3000"
```

```
  25 PAPER NOT PI: INK VAL "7":
BORDER NOT PI: CLS : GO SUB VAL
 "4000": RANDOMIZE USR VAL "331
10": PRINT AT VAL "4",NOT PI;"p
rint text";TAB th;"p"
  28  PRINT '"save text";TAB th;
"s"
  30 PRINT '"load text";TAB th;"
l"
  40 PRINT '"edit text [";PEEK V
AL "33105"+VAL "256"*PEEK VAL "
33106";" words]";TAB th;"y"
  50 PRINT '"save Tasword autost
art";TAB th;"t"
  60 PRINT '"modify colours";TAB
 th;"m"
  70 PRINT AT VAL "20",VAL "11";
"press key"
  80 LET a$=INKEY$: IF a$="" THE
N  GO TO VAL "80"
  90 LET i=NOT PI: LET b=CODE a$
: IF b<VAL "97" THEN  LET b=b+V
AL "32"
 110 IF b=VAL "115" THEN  LET i=
VAL "6"
 120 IF b=VAL "108" THEN  LET i=
VAL "8"
 130 IF b=VAL "112" THEN  LET i=
VAL "4"
 140 IF b=VAL "121" THEN  LET i=
VAL "10"
 150 IF b=VAL "116" THEN  LET i=
VAL "12"
 160 IF b=VAL "109" THEN  LET i=
VAL "14"
 180 IF i>NOT PI THEN  PRINT AT
i,VAL "31"; FLASH PI/PI;CHR$ b;
: GO TO VAL "500"
 190 GO TO VAL "80"
 200: CLS : PRINT AT SGN PI,VAL
"8";"PRINT OPTIONS"''"Defaults
in ( )       New value";AT 21,0;
"[ENTER]"
 210 LET i=VAL "6": LET j0=VAL "
23": PRINT AT i,VAL "0";"Line s
pacing? (1) ";TAB 22;: GO SUB f
s: IF a$="" THEN  LET a$="1"
 211 PRINT a$
 215 POKE VAL "62235",VAL a$
 216 LET i=VAL "8": LET j0=VAL "
23": PRINT AT i,VAL "0";"Left m
argin?  (8) ";TAB 22;: GO SUB f
s: IF a$="" THEN  LET a$="8"
 217 PRINT a$
 218 POKE VAL "60927",VAL a$
 220 LET i=VAL "10": PRINT AT i,
NOT PI;"Start line? (1) ";TAB 2
2;: GO SUB fs: IF a$="" THEN  L
ET a$="1"
 221 PRINT a$
 230 LET c=VAL "64"*(INT VAL a$-
PI/PI): LET b=c+(VAL "33280"):
LET x=VAL "60045": GO SUB VAL "
950"
 240 LET i=VAL "12": PRINT AT i,
NOT PI;"Finish line? (last)";TA
B 22;: GO SUB fs: IF a$="" THEN
  LET b=a-c: GO TO VAL "250"
 241 PRINT a$
 245 LET b=VAL "64"*INT VAL a$-c

 250 RANDOMIZE USR VAL "59806":
RANDOMIZE USR (PEEK VAL "62472"
+VAL "256"*PEEK VAL "62473")
 260 CLS : PRINT AT VAL "20",NOT
 PI;"Press 'q' to stop printing
"
 270 LET x=VAL "60049": GO SUB V
AL "950"
 275 LET c=PEEK VAL "62470": IF
c<>NOT PI THEN  LPRINT CHR$ c
 280 RANDOMIZE USR VAL "60038"
 285 LET c=PEEK VAL "62471": IF
c<>NOT PI THEN  LPRINT CHR$ c
 290 RANDOMIZE USR VAL "59806":
GO TO VAL "10"
 500 PRINT AT VAL "20",NOT PI;"
press the "; FLASH PI/PI;"ENTER
"; FLASH NOT PI;" key to procee
d";AT VAL "21",NOT PI;"  press
"; FLASH PI/PI;"c"; FLASH NOT P
I;" to change the choice  "
 510 LET a$=INKEY$: IF a$="c" OR
 a$="C" THEN  GO TO VAL "20"
 520 IF CODE a$=VAL "13" THEN  G
O TO VAL "600"
 530 GO TO VAL "510"
 610 IF b=VAL "121" THEN  CLS :
GO TO VAL "10"
 615 IF b=VAL "109" THEN  CLS :
GO TO VAL "9100"
 620 IF b=VAL "115" THEN  CLS :
GO TO VAL "1000"
 630 IF b=VAL "116" THEN  CLS :
GO TO 9000
 640 IF b=VAL "108" THEN  LET a=
NOT PI: GO TO VAL "2000"
 650 IF b=VAL "112" THEN  GO TO
VAL "200"
 850 PRINT AT i,j;a$;PEEK x: GO
SUB fs: IF a$<>"" THEN  POKE x,
VAL a$
 860 RETURN
 950 POKE x,b-VAL "256"*INT (b/V
AL "256"): POKE (x+PI/PI),INT (
b/VAL "256"): RETURN
```

```
1000>LET b=VAL "33280":CLS
1005 CLS : PRINT #4: CAT ".CT",:
 PRINT AT VAL "20",NOT PI;"name
?(less the .CT)";AT VAL "21",NO
T PI;"[ENTER]": LET i=VAL "10":
 LET j0=NOT PI: GO SUB fs
1010 IF LEN a$<SGN PI OR LEN a$>
VAL "6" THEN  CLS : PRINT AT VA
L "12",NOT PI; INVERSE 1;"inval
id name": GO TO VAL "1005"
1038 PRINT #4: SAVE a$+".CT"CODE
 b,a
1039 GO TO VAL "10"
2000 CLS : PRINT #4: CAT ".CT",:
 PRINT AT VAL "20",NOT PI;"name
?(less the .CT)";AT VAL "21",NO
T PI;"[ENTER]"
2010 LET j0=NOT PI: LET i=VAL "1
2": GO SUB fs
2030 LET b=VAL "33280"
2032 PRINT #4: LOAD a$+".CT"CODE

2045 GO TO VAL "10"
3000 FOR i=VAL "23296" TO VAL "2
3361": POKE i,VAL "32": NEXT i
3005 POKE VAL "23362",NOT PI
3010 PRINT AT VAL "8",NOT PI;"ty
pe word to be replaced / found"

3012 LET j0=NOT PI: LET i=VAL "1
0": GO SUB fs: IF a$="" THEN  G
O TO VAL "10"
3020 LET j=NOT PI: FOR i=PI/PI T
O LEN a$: POKE VAL "23297"+i,CO
DE a$(i): IF a$(i)=" " THEN  LE
T j=j+PI/PI
3021 NEXT i
3022 IF j<>NOT PI THEN  CLS : PR
INT AT VAL "12",NOT PI;"just a
word - no spaces allowed": GO T
O VAL "3000"
3025 POKE VAL "23297",LEN a$
3030 PRINT AT VAL "12",NOT PI;"w
ith (just ENTER for find only)"
: LET i=VAL "14": GO SUB fs
3040 IF a$="" THEN  POKE VAL "23
362",PI/PI: GO TO VAL "3060"
3050 FOR i=PI/PI TO LEN a$: POKE
 VAL "23329"+i,CODE a$(i): NEXT
 i
3060 LET a=USR VAL "64955": LET
a=USR VAL "64333": GO TO VAL "2
0"
4000 PRINT AT NOT PI,VAL "9";"Ta
sword Two";AT SGN PI,VAL "4";"
 Tasman Software 1983";AT VAL "
2",VAL "3";"Version 4.2 R.H.Mit
chell": RETURN
5000 INPUT  LINE a$: RETURN
9000 CLEAR VAL "33099": PAPER NO
T PI: INK NOT PI: BORDER NOT PI
: CLS : RANDOMIZE USR VAL "102"

9020 GO TO VAL "15"
9100 CLS : INPUT "text area"'"pa
per ";paper: INPUT "ink ";ink:
LET c=paper*VAL "8"+ink
9120 POKE VAL "58512",VAL "54":
POKE VAL "58521",VAL "54": POKE
 VAL "58513",c: POKE VAL "58522
",c
9130 INPUT "l & r margin area"'"
paper ";paper: INPUT "ink ";ink
: LET c=paper*VAL "8"+ink
9140 POKE VAL "58508",VAL "54":
POKE VAL "58517",VAL "54": POKE
 VAL "58509",c: POKE VAL "58518
",c
9150 INPUT "bottom screen area T
OP line"'"paper ";paper: INPUT
"ink ";ink: LET c=paper*VAL "8"
+ink
9155 POKE VAL "59993",c
9160 INPUT "bottom screen area B
OTTOM line"'"paper ";paper: INP
UT "ink ";ink: LET c=paper*VAL
"8"+ink
9165 POKE VAL "64570",c
9170 INPUT "64 col border colour
 ";b
9175 INPUT "32 col border colour
 ";b1
9180 POKE VAL "64516",b: POKE VA
L "60641",b1
9200 GO TO VAL "10"
9300 PRINT #4: SAVE "taswo.C2"CO
DE 54784,10751
```



LARKEN REPAIR.B1 PROGRAM
by G. Chambers

One of our members, Stephen Gunhouse, Windsor, Ont. has come up with some suggestions for improving the program "repair.B1", which was in a recent issue. To quote part of his letter:

"I noticed about 3 things in the program that could be done better and faster. If it is of interest, change the following lines.

```
 600 CLS
 620 IF b$<>c$(m) THEN  NEXT m
 630 CLS
 640 IF m>e THEN  LET e=m: LET c
$(e)=b$: PRINT AT 16,11;b$
 650 CLS
 675 PRINT AT 13,0;d$;AT 14,0;"P
lacing names and tracks in dire
ctory"
 685 CLS
 720 LET F=11
 730 FOR k=1 TO d
 740 IF c$(e)=a$(k) THEN  POKE n
ame+f,k+128: LET f=f+1
 750 NEXT K
 760 POKE name+f,249
 770 LET name=name+34
 780 PRINT AT 16,11;c$(e)
 790 NEXT n

DELETE 800 to 850
```

"I no longer use the variable trackno, I am referring to name instead.

"I know some of the changes are considered bad practice in other computers; Sinclair BASIC does not require you to properly terminate FOR-NEXT loops. Removing the extra loop in 680-850 should speed up the process quite a bit, as should shortening the track loop now in 730.

****

MOLASSES IN JANUARY

This seems to be an apt description of Larken Electronics response time, based on member's experience. Whether it be inquiries, orders, service, or repairs it seems to take forever to get a reply. Come on, Larry, your customers deserve better.

****

If you want a response from Larry, it's best to phone him directly.

IS YOUR CALENDAR PROGRAM ACCURATE?
By Geo Chambers

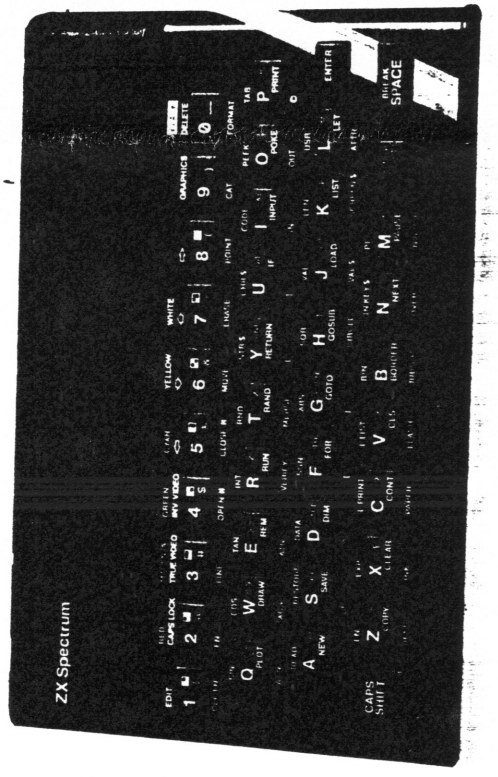
In the first issue of the TTSUC newsletter (in 1983) there was an article with the above title. I see where calendar programs still crop up and it seemed to me that this article could be repeated and would still be interesting.

" When your calendar program states that your grandmother was born on a Tuesday, do you really believe it or is it more an article of faith in the program? The following list of dates will help to put your mind at rest, and can be used to reassure the dubious.

DAY	DATE	SOURCE
Monday	15 Nov. 1762	James Boswell's "London Diary"
Wednesday	15 Dec 1762	" " " "
Friday	6 May 1763	" " " "
Saturday	19 Mar 1763	" " " "
Sunday	1 Jan 1660	Samuel Pepys Diary
Sunday	4 Mar 1660	" " "
Thursday	15 June 1665	" " "
Friday	1 Jan 1669	" " "
Monday	5 Aug 1878	Lady Dufferin "My Ca'n Journal"
Thursday	10 Aug 1876	" " " " "
Tuesday	14 Aug 1873	" " " " "
Sunday*	15 Apr 1666	Samuel Pepys Diary
Sunday*	19 Apr 1663	" " "
Sunday*	3 Apr 1763	James Boswell's "London Diary"

*Note: These three dates are Easter Sundays.

****



TS2068 LARKEN DISK COPY UTILITY (copy12.B1)
by G. Chambers

The listing is a program which will copy a disk on the Larken system using either one or two drives.It has been designed to work with the current Larken 4ystem which saves 5090 bytes per track. With some minor modifications it could also be used on the Larken system which saves 1960 bytes per track. It makes use of the Larken M/C "Move .C1" utility.

With other modifications it could probably work with the Larken cartridges designed for the Oliger, and Aerco Disk systems.

This utility is a little different than Larken's disk copy routine, "Move.B1". While using elements of the Larken utility, it has several significant differences. Firstly, it copies on a program basis rather than on a track by track basis. What this means is that the second disk is not a "chinese copy" of the master disk. Where the original disk might very well have a program spread over several non-adjacent tracks, on the copy the program will be stored on contiguous tracks. Usually this is considered advantageous. It also means that only active programs/ tracks are in fact copied. Tracks not in use are not copied.

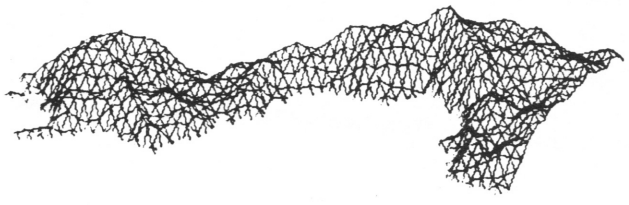
Secondly, it offers the option of an automatic copy of all programs on the disk, or the copying of selected programs only.

The program starts off by asking for the Originating and Destination drive No.'s. If the originating and destination drives are the same, i.e. single-drive option, the program will ask you to swap disks during the copying process. Otherwise it will proceed to copy autimatically.

The program then loads the directory track, and searches it for program names on the disk. It stores these in an array, using them during the copy process.

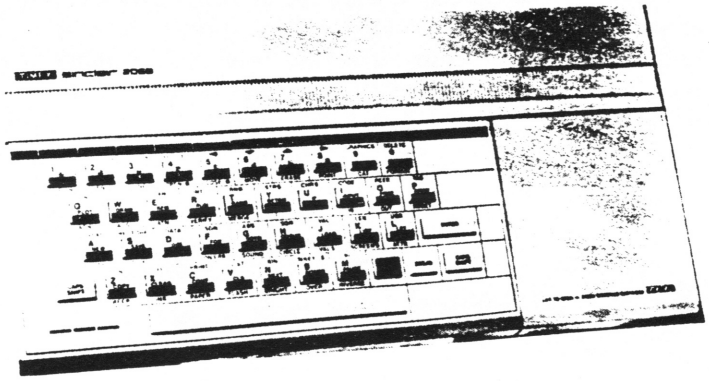
During the copying process the program shows onscreen the name of the program is being copied, and also a record of the number of programs on the disk, and the number currently copied or skipped.

Lines 210-240 contain a disk operating routine used to load the directory buffer into memory in the initial stage of program operation. This M/C routine was covered in the Jan/Feb '88 issue of our newsletter.



```
100 REM  Disk Copy Prgm (v1.22)
   for the LARKEN system
110   REM   By G. Chambers
  14 Richome Court                    Scarbo
rough, Ont.                  CANADA  M1K 2Y1

120 REM   Use to copy a disk          with
a 1- or 2-drive system
130 REM Data statements contain
Drive Control Code.
140 REM For use with the DSK400       syst
em of 5090 bytes/track  using a DD drive
i.e.80 tracks
150 RANDOMIZE USR 100: OPEN #4,"dd"
170 RESTORE VAL "210"
180 FOR n=VAL "63000" TO VAL "63047"
190 READ a: POKE n,a
200 NEXT n
210 DATA 195,43,246,0,0,0,0,0,0,243,205,9
8,0,201,58
220 DATA 100,0,251,201,205,33,246,58,176,
92,50,29,32,205,126
230 DATA 0,205,123,0,33,112,32,17,156,224
,1,0,20,237,176
240 DATA 195,38,246
280 LET trac=VAL "23728": LET loadbuf=VAL
"63000"
290 LET name=VAL "57688"
300 BORDER PI/PI: PAPER PI/PI: CLS
310 GO SUB VAL "800"
320 PRINT AT VAL "2",VAL "7"; INK VAL "2"
; PAPER VAL "6";"LARKEN DISK UTILITY"; PA
PER PI/PI;,,TAB VAL "3"; PAPER VAL "6";"D
isk Copying-1 or 2 Drives"; PAPER VAL "1"
,,TAB VAL "7"; PAPER VAL "6";"By George C
hambers"
330 INK VAL "3": PLOT NOT PI,VAL "108": D
RAW NOT PI,VAL "62": DRAW VAL "255",NOT P
I: DRAW NOT PI,VAL "-62": DRAW VAL "-255"
,NOT PI
340 INK VAL "6": PLOT VAL "8",VAL "114":
DRAW NOT PI,VAL "50": DRAW VAL "238",NOT
PI: DRAW NOT PI,VAL "-50": DRAW VAL "-238
",NOT PI: INK VAL "7"
350 PRINT '''"Install the disk to be copi
ed""" in the originating Drive"""... the
n Press a key"': PAUSE NOT PI
352 INPUT "Enter the Orig. Drive No.(0-4)
";Odrv
353 PRINT #4: GO TO Odrv
354 INPUT "Enter the Dest. Drive No.(0-4)
";Odrv
355 POKE VAL "23658",VAL "8": LET r$="N":
INPUT "Select files to save? Y/N";r$
360 REM    Picking pgm names
from buffer(Track 0)
370 POKE trac,NOT PI: RANDOMIZE USR loadb
uf
380 PRINT AT VAL "10",NOT PI;c$'c$'c$;TAB
VAL "9";"Files on Disk"
```

```
 390 FOR n= PI/PI TO VAL "90"
 400 LET e=n
 410 IF PEEK (name+3)=NOT PI THEN  LET e=n
-1: LET n=VAL "90": GO TO VAL "480"
 420 IF PEEK (name+PI/PI)=VAL "254" THEN
LET name=name+VAL "34": GO TO VAL "410"
 430 FOR m=PI/PI TO VAL "9"
 440 LET d$(n,m)=CHR$ PEEK (name+m)
 450 NEXT m
 460 LET name=name+VAL "34"
 470 PRINT AT VAL "15",VAL "11";d$(n)
 480 NEXT n
 490 PAUSE VAL "30": PRINT AT VAL "14",NOT
 PI;c$;C$''TAB VAL "14";e;" files on disk
"
 500 DIM f$(VAL "9")
 520 PRINT AT VAL "13",VAL "7";"File being
 copied"
 530 FOR n=PI/PI TO e
 535 PRINT AT VAL "16",NOT PI;C$
 540 LET f$=d$(n)
 545 IF r$(1)<>"N" THEN  PRINT AT VAL "21"
,NOT PI;c$;AT VAL "21",VAL "3";"Copy """;
f$;""" Y/N?"
 546 LET s$="Y": IF r$<>"N" THEN  INPUT TA
B VAL "23";s$
 547 IF s$(1)="N" THEN  GO TO 680
 550 GO SUB OrgDrv
 555 PRINT AT VAL "21",NOT PI;C$
 560 FOR a=PI/PI TO VAL "9": POKE Onam+a,C
ODE f$(a): POKE Dnam+a,CODE f$(a): NEXT a

 570 PRINT AT VAL "15",VAL "11";f$
 580 PRINT #4: GO TO Odrv: LET rt=USR indi
r: IF rt<>0 THEN  GO TO rt
 590: LET rt=USR Ld1: IF rt<>NOT PI THEN
GO TO rt
 600 LET Tlen=PEEK VAL "34002": LET pass=P
I/PI: IF Tlen>(PEEK Nbcs)-1 THEN  LET Pas
s=VAL "2"
 610 GO SUB DesDrv
 620 LET rt=USR Svnam: IF rt<>NOT PI THEN
 GO TO rt
 630 LET rt=USR Svdata: IF rt<>NOT PI THEN
  GO TO rt
 640 IF pass=PI/PI THEN  GO TO VAL "670"
 650 GO SUB OrgDrv: LET rt=USR Ld2: IF rt<
>NOT PI THEN  GO TO rt
 660 GO SUB DesDrv: LET rt=USR Svdata: IF
rt<>NOT PI THEN  GO TO rt
 670 LET rt=USR Svend: IF rt<>NOT PI THEN
 GO TO rt
 680 PRINT AT VAL "18",VAL "14";n;"  copie
d/skipped"
 690 BEEP VAL ".1",VAL "10": BEEP VAL ".1"
,VAL "10"
 700 NEXT n
 705 PRINT #4: GO TO 0
 710 FOR n=VAL "10" TO VAL "21": PRINT AT
n,NOT PI;c$: NEXT n
 720 PRINT AT VAL "15",VAL "6";"Disk copy
completed"''"Press a key to copy another
disk"
 730 PAUSE NOT PI: GO TO VAL "280"
 790 STOP
 800 LET Mem=VAL "34800": LET Owka=VAL "34
700":  LET Dwka=VAL "34750": LET Onam=VAL
 "34599": LET Dnam=VAL "34649"
 810 LET indir=VAL "32000": LET Ld1=VAL "3
2003": LET Ld2=VAL "32006": LET Svnam=VAL
 "32009": LET Svdata=VAL "32012": LET Sve
nd=VAL "32015": LET Renam=VAL "32018"
 820 LET OrgDrv=VAL "870": LET DesDrv=VAL
"890": LET Nbcs=VAL "34003": LET Bsize=VA
L "34004"
 830 REM DDen Bsize=5120 Nbcs=7   SDen Bsi
ze=2050 Nbcs=14
 840 POKE Nbcs,VAL "7": PRINT #4: POKE Bsi
ze,VAL "5120"
 850 DIM d$(VAL "90",VAL "9"): LET c$="
                                "
 860 RETURN
 870 IF Odrv<>Ddrv THEN  PRINT #4: GO TO 0
drv: RETURN
 880 INPUT "Insert Source Disk-Press ENTER
"; LINE a$: RETURN
 890 IF Odrv<>Ddrv THEN  PRINT #4: GO TO D
drv: RETURN
 900 INPUT "Insert Dest'n Disk-Press ENTER
"; LINE a$: RETURN
 910 STOP
9900 REM ** Save to Disk **
9910 PRINT #4: SAVE "copy12.81" LINE VAL "
9990"
9920 PRINT #4: SAVE "Move .C1"CODE VAL "32
000",VAL "1000": RUN
9930 STOP
9990 CLEAR VAL "31999": RANDOMIZE USR 100:
 LOAD "Move .C1"CODE VAL "32000": RUN
```



Disk Droppings
by
Greg Lloyd

The latest offering from Larken Electronics is a 256K RAM-DISK for the 2068. It gives the owner up to 256K of Non-Volatile Static Ram (SRAM). This is battery backed storage of up to 256K of programs and data. It can be used in combination with the DSK 400 disk interface and 4 disks or on its own with the LKDOS cartridge. It will also AUTOSTART to load and run a program on power up.

The board used for the RAM-DISK is roughly the size of the DSK 400 - 4 x 2 inches and piggy-backs to the your disk interface or the expansion port on the 2068. It is fully through ported so other periferals can be hung behind. My 2050 modem and 2040 printer worked just fine. The order of installation does not seem to matter. I used the DSK 400 interface then the RAM-DISK personally.

To default to the RAM-DISK you just have to press the [J] key and [ENTER] on power up. If you have saved a startup menu or any other application it loads and runs immediately. The time involved is about one second. If you have used the T/S Command Cartridge System to run Crazy Bugs or States and Capitals you will see the advantage over tape and disk. The added feature is that you can save and change data on the RAM-DISK and it will still be there after you turn the machine off. This all happens in a blink of an eye. No whirring, clicking, popping, grinding, crunching, gorching or glitching and no red leds flashing. You can also use the command PRINT #4: GOTO 4 if you are already powered up. The LKDOS software sees the RAM-DISK as the fifth possible drive. All in all, a new and most unusual experience. Larken Electronics has not only brought 2068 disk users a new standard of compatibility but now a new meaning to the phrase "Silent Service".

Sir Clive's latest creation the Z-88 (bearing the Cambridge Computer name and a huge price tag in my humble opinion), uses the same principal to store and operate. Solid state memory is certainly faster, more robust and has fewer moving parts than any disk system I have seen. I think it is the most sensible way to go, barring the resurrection of those beloved micro-drives. My system has 128K of SRAM on board. This gave me enough storage to be useful and no concern about making the mortgage payments.

The bare board unassembled and without memory is priced at $15. The assembled board without memory is available for $60. A LKDOS cartridge and software upgrade is necessary to run this option. The setup could be used as the only source of storage if desired. It does make a neat solution to those of you who wish not to go for a disk drive. All other functions are still available so you could save to tape for permanent storage and backup.

Larry Kenney the wizard behind the system, has developed a back-ground print spooler. This feature allows Tasword files to be printed while another program is running. This is another plus to the system, the creator is using and developing further enhancements to the machine. And you thought you had an orphan computer. Sorry to disappoint you.

SRAM chips needed for the RAM-DISK are 43256LP from NEC or 62256LP from other manufacturers. The latter are priced $26.40 (Can.) at Active Components. The speed of these should be 120 or 150 nanosecond. The LP stands for low power and unless you have an unlimited supply of batteries its recommended you use the LP version. Larken Electronics has some SRAM chips available for less and Computer Shopper has them advertised from $11 to $13 (U.S.) if you want to wait. Price is now volatile in the non-volatile memory market.

So if you have a DSK 400 from Larken and want to get the latest goody or if you don't have a disk and want some of the benefits, get in touch with your checkbook and order the RAM-DISK. I find it the best thing I ever did for my 2068 system. To quote from the movie, "I feel the need ... the need for SPEED". You don't need to join the Navy or buy and F-14, get a RAM-DISK from Larken and go supersonic. GBL 880420.

LARKEN ERASE FACILITY
by G.F. Chambers

Occasionally one wishes to erase a number of files on a disk. With the LARKEN system this can become quite tedious because of its lengthy command structure. I have found the following routine to be quite useful whenever I have that task. I simply type it in, run it, and enter the program names.

```
 10 RANDOMIZE USR 100: CAT "",
 20 INPUT a$
100 RANDOMIZE USR 100: ERASE a$
,: GO TO 20
```

Review Of PC-DRAW V. 3.0

PC-Draw V.3.0 is a program for designing printed circuit boards. You can use the program in either the Timex mode or the Sinclair mode. Your drawing is limited to 4 inches by 10 inches on a 80 column printer.

You can either use a joystick or the keyboard to design your drawing. Drawings that are created can easily be save to tape. When the program first starts you have to customize your printer to the software, once the program is customized you can then save your custom PC-Draw.

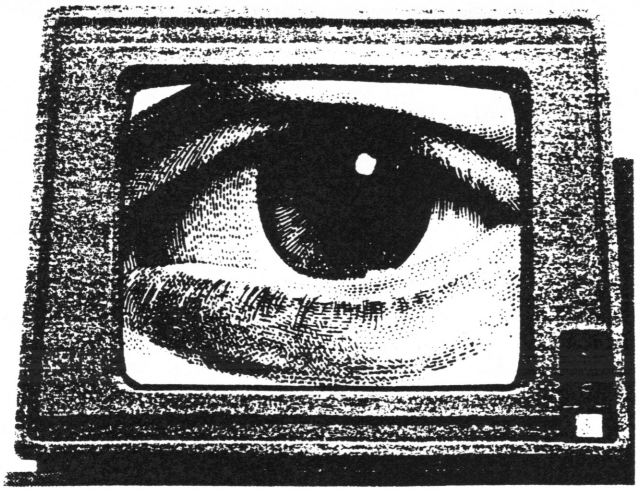
After the customizing the program clears the screen and then you can start your work. On the bottom of the screen you will find a series of words and UDG's. Pressing the fire button changes the border color and a cursor should start flashing at the bottom of the screen. You can move this cursor and select any of the UDG's. Pressing fire again places the UDG on the screen. Pressing the "C" key brings you to a new menu which contains SIP, DIP, CIRCLE, TEXT, CLS/CLEAR, HOME, POSITION, MOVE, MIRROR, UNDO, STORE, EXPAND, CLEAVE, and LOAD/SAVE .

To draw line you would go to the main screen, press fire and move the cursor on the bottom of the screen to DRAW. Once selected, you can draw a line between two points. You have to draw the line within the screen, but can always move the screen by just moving the cursor to the near the end of the screen, and it would automatically scroll the screen. Pressing the F key in the draw mode changes the cursor so you can work with one pixel at a time. You can reduce or increase the thickness of any character or line.

Overall PC-Draw V 3.0 is a very good program. It is very easy to use. The print-outs come out very good. The only problem I found with this program is the program doesn't seem scan the joystick fire button properly.

Commands	Syntax
CLEAVE	clev d ll
CIRCLE	cir rr
CLEAR	clear
CLS	cls
DIP	dip d pins width
EXPAND	exp
LOAD	load
MIRROR	mir
MOVE	mov hh vv
POSITION	pos xx yy
PRINT	pri d m
QUIT	quit
SAVE	save
SIP	sip d pins
STORE	stor
TEXT	text
UNDO	undo

Reviewed By Renato Zannese
April, 25, 1988
Availiable at CURRY COMPUTERS



Dear George Chambers,

I just got a news letter and from reading it, I got the impression that maybe I COULD offer something that some of our members don't know already.

In the process of writeing, re-writeing and fiddling around with a word processing program, I've come across a few things that may be of interest to some. The following is a list of these things:

1. By useing "PAUSE 0" instead of "IF INKEY$ = "" THEN....." I not only saved memory, but found out that it makes use of all the computer's normal keying characteristics! (repeat, delay before repeating,..... a VERY powerful command!) I don't know why, I just happened to discover this by my endless fiddling.

2. "IF CODE I$ = 6 THEN POKE 23658, (8 AND PEEK 23658 = 0)" enables the caps lock key within the program. (this one took some research to figure out how to accomplish useing little memory)

3. I used all 22 lines for the display in my program. Later I found that to prompt an input, I would HAVE to use an INPUT statement which would require keying "ENTER" after inputing the choice. This was bothersome, so in trying to solve this problem I came up with a way to use the INKEY$ function in conjunction with an INPUT statement. This allowed the printing of a prompt at the bottom of the screen while the computer was waiting for INKEY$!

The following are the program lines that allow this:

```
10 IF INKEY$ = "" THEN INPUT "E-DIT/N-EXT PAGE/P-RIOR PAGE
(SPACES TO FILL IN THE REST OF ONE LINE AND NO MORE)": GO TO 10.

20 LET I$ = INKEY$.
```

Notice that there is no variable in the INPUT statement! For some reason, this syntax is accepted!

What this does is print the INPUT statement if no key is being pressed; immediately erase it since there is no variable to input; then loop back around. When the computer detects a key being pressed, instead of re-printing the INPUT statement, it assigns the value of INKEY$ to I$.

So what you get is a very rapidly blinking prompt to an INKEY$ function.

Now, back to narrative...

As always I've got a question, tip #3 is only good for short prompts. The longer the written prompt, the harder the end is to read since the first characters remain on the screen longer than the last. Does anyone know of a better way of accomplishing this by way of pokes or a machine code routine? My program was written to be used with the OS-64, so my prompt is almost a whole line long. (64 characters per line)

Well, that's about it.

Until I hear from you again,

John Vander Stel
502 MI CO, 2ACR
APO NY 09093

John Vander Stel
BOX 535
NEWAYGO, MI 49337

NEW LOCATIONS FOR M/C ROUTINES IN A 64K RAMPACK

Retyped from the Sept 1985 issue of Vancouver N/L "ZXAPPEAL"

Those of you who, like me, have a 64K Rampack know that the area between 8 and 16K is a great spot to put your favourite machine code routines.

The trouble is that a lot of commercially available peripherals, made for the ZX81, use up some or all of this area by squatting their ROMs all over it.

On a normal ZX81, machine language programs do not run above 32K; there is however a solution. It comes to us from Christofer Tolis, who lives in Stockholm, Sweden; via Glen Read, who noticed it in the British mag. "Electronics and Wireless World".

As you may know, when address line A15 goes high (and M1 low, which means an OPcode fetch is in progress, as opposed to a data fetch, this is the reason you can store data above 32K in the first place) the Ferrenti chip kicks in the display routines. See also ZXappeal April '85.

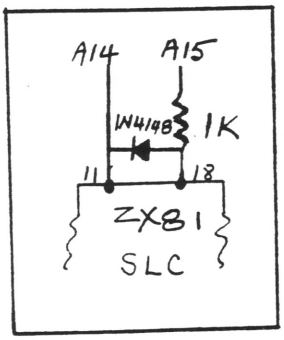
To avoid all this we simply make sure A15 can not go high (at the Ferranti chip) unless A14 does the same, which it will not do when you are running a machine language routine between 32 and 48K.

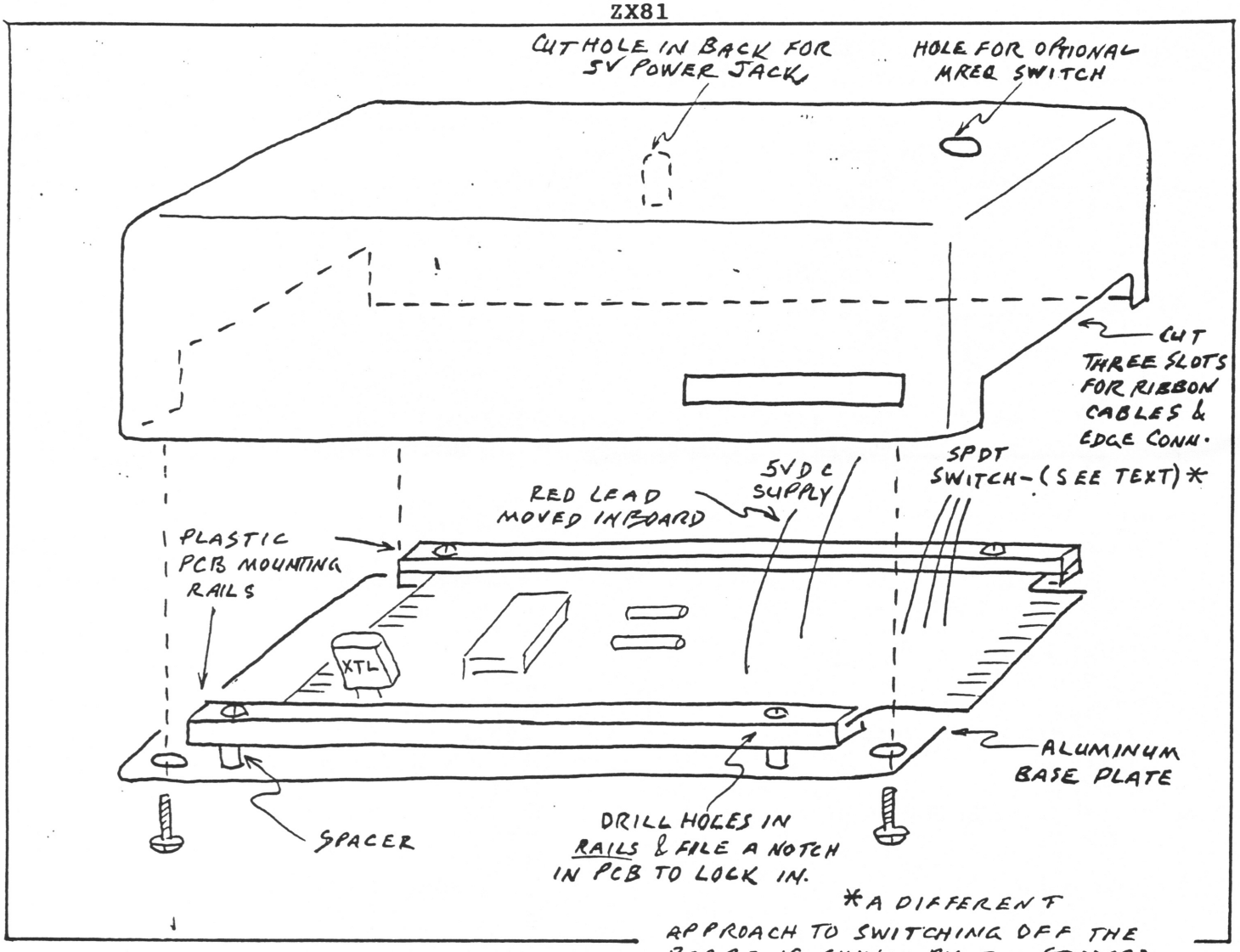
Don't worry A14 will be high when a legitimate display needs generating as long as the display file lives in the Sinclair sanctioned 16 to 32K area. This means that your BASIC program, which fills up the space between the system variables and the display file, must be less than 15K, in order to keep the display file within the 32K border, but programs that long have yet to be written for the ZX81.

TO DO THE DEED:

Cut the trace at the Ferranti #18 pin and install a 1K resistor. Solder a diode between pins 11 and 18 on the Ferranti side of the resistor using the correct polarity, and ,voila, yet another 16K to put your favourite machine language routines. Oh and by the way, these routines are of course safe from the reset button just as they are in the 8 to 16K area. You knew that, didn't you?

Retyped by G.F.C.





LARKEN CASED

Mel Richardson

The Larken ZX81 Disk Interface is a 7 X 4 inch uncased printed circuit board with two ribbon cables and power supply wires attached. The board lies flat behind the computer and gets pretty awkward with a few other peripherals to deal with. A case from Radio Shack (Cat #270-232) will protect the exposed board. The case is used upside down, with the metal cover serving as a base.

Some work must be done first. The +5V (red) lead should be moved from the trace at the boards edge. Follow the trace to a convenient spot inboard and solder it. It's a nice fat trace and easily done.

The crystal at the drive cable end will need to be bent up to clear the rail. Take care here! Bending mine twice broke it off, but the crystal is a stock item at Radio shack, a "Colourburst" (Cat #272-1310).

If you need the 8-16K area for other devices, wire in the switch as described in Sinc-Link Vol 5 No 6. Otherwise just leave it out.

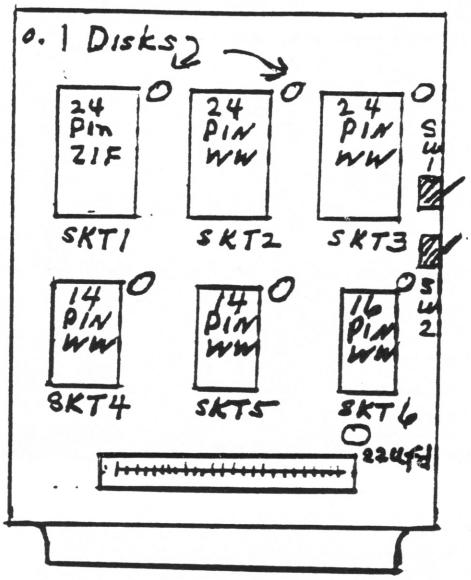
Mount the board on the base far enough toward the edge connector end to allow access to it. I have the edge connector projecting about 1/8" past the base plate and it works just fine. File notches in the PCB at the mounting bolt locations to "lock" the board in place. I used a little round chainsaw file (very inexpensive) and this file can be used to help shape the slots and holes in the box.

The 1/4" spacers are Radio Shack items as is the power jack (274-1565) and plug. The PC mounting rails were from Active Electronics in Toronto and some stick-on rubber feet complete the job.

With planning and patience the flat black enclosure can look and work just like factory.

ZX81 EPROM BOARD

Continued from SINC-LINK 6-1 Jan.-Feb. '88



Listing 1

```
 10 SLOW
 20 LET E=0
 30 PRINT "FIRST BYTE LOCATION TO COPY"
 40 INPUT B
 50 PRINT B
 60 PRINT "LAST BYTE LOCATION TO COPY"
 70 INPUT C
 80 PRINT C
 90 PRINT "ENTER FIRST EEPROM BYTE LOCATION"
100 INPUT A
110 PRINT A
120 LET D=PEEK B
130 REM ERASE BYTE
140 POKE A,255
150 PAUSE 2
160 IF NOT PEEK A=255 THEN GOTO 140
170 REM WRITE
180 POKE A,D
190 PAUSE 1
200 SCROLL
210 REM VERIFY
220 PRINT A;",";D;TAB 16;PEEK A
230 REM NEXT ADDRESS
240 IF E=C-B THEN GOTO 300
250 LET A=A+1
260 LET B=B+1
270 GOTO 120
300 SCROLL
310 PRINT "END OF COPY"
320 STOP
400 RAND USR 14336
410 REM SAVE"EPMLD.B1"
420 RUN
500 FAST
510 FOR N=1 TO 2048
520 IF PEEK (14335+N)<>PEEK (8191+N) THEN PRINT N
530 NEXT N
540 PRINT "END"
```

PARTS LIST

1- PCB. RS 276-154(A) $2.99
1- 23/46 WW socket 0.1" spacing All Elec $4.00
2- 24 pin WW sockets All Elec $1.00 each
1- 24 pin ZIF socket you are on your own here
1- 16 pin socket RS 276-1994 $1.39/2
2- 14 pin sockets RS 276-1993 $1.29/2
3- 4700 ohm 1/4 watt resistors RS 271-1330 $0.39/5
6- 0.1 ufd disk capacitors RS 272-135 $0.49 each
1- 22ufd 16 V capacitor tantalum RS 272-1437 $0.89
2- SPDT switches RS 275-625 $1.69 each
1- 1n914 diode RS 276-1122 $0.99/10
1- 52B13 Janeco $1.69
1- 74LS00 Janeco $0.35
1- 74LS32 Janeco $0.39
1- 74LS139 $0.89
1- 6116LP15 Janeco $1.95

Listing 2

```
 10 SLOW
 20 LET E=1
 30 SCROLL
 40 PRINT "ENTER FIRST EEPROM BYTE LOCATION"
 50 INPUT A
 60 SCROLL
 70 PRINT A
 80 SCROLL
 90 PRINT "ENTER BYTE IN DECIMAL"
100 INPUT B
110 SCROLL
120 PRINT B
130 REM ERASE BYTE
140 POKE A,255
150 PAUSE 2
160 IF NOT PEEK A=255 THEN GOTO 140
170 REM WRITE
180 POKE A,B
190 PAUSE 1
200 SCROLL
210 REM VERIFY
220 SCROLL
230 PRINT A;",";B;TAB 11;PEEK A;TAB 15;E
240 REM NEXT ADDRESS
250 LET E=E+1
260 LET A=A+1
270 GOTO 80
300 RAND USR 14336
310 REM SAVE"EPMLD.B2"
320 RUN
```

Listing 3

```
 10 PRINT "TO PRINT ML BEING COPIED/POKED."
 11 PRINT "ENTER C:TO SPEEDUP.DELETE 105."
 12 PRINT "175.SEE PROGARM END TO REPLACE"
 13 PRINT "AFTER ML IS COPIED.USE GOTO 130"
 14 PRINT "TO PLACE ML WHERE DESIRED.IF THE"
 15 PRINT "DELETIONS WERE MADE.USE GOTO20"
 16 STOP
 20 PRINT "INPUT FIRST ML ADDRESS TO COPY"
 30 INPUT A
 35 PRINT A
 36 PRINT
 40 PRINT "INPUT LAST ML ADDRESS TO COPY"
 50 INPUT B
 55 PRINT B
 56 PRINT
 60 LET C=(B-A)+1
 65 DIM E$(C)
 70 PRINT "BYTES TO BE COPIED=";C
 72 PAUSE 100
 75 CLS
 76 FAST
 80 LET A=A-1
 90 FOR N=1 TO C
100 LET E$(N)=CHR$ PEEK (A+N)
105 PRINT CODE E$(N);"  ";
110 NEXT N
112 PRINT
113 PRINT
114 SLOW
115 PRINT "TRANSFER TO STRING COMPLETE"
116 PRINT "GOTO 310 TO TAPE SAVE:GOTO 300"
117 PRINT "FOR DISK:GOTO 130 TO MOVE ML"
120 STOP
125 PRINT
130 PRINT "FIRST ML ADDRESS OF DESTINATION"
131 PRINT "IT IS NOW= ";A+1
140 INPUT A
145 CLS
146 FAST
150 LET A=A-1
160 FOR N=1 TO C
170 POKE (A+N),CODE E$(N)
175 PRINT PEEK (A+N);"  ";
180 NEXT N
184 PRINT
185 PRINT
186 PRINT "ML MOVED TO DESIRED LOCATION"
187 SLOW
190 STOP
200 REM "LINES 105,175 ARE BELOW SO THAT"
201 PRINT "THEY MAY BE RE-ENTERED IF WISHED"
205 PRINT CODE E$(N);"  ";
275 PRINT PEEK (A+N);"  ";
300 RAND USR 14336
310 REM SAVE"MLCOPY.B1"
320 GOTO 1
```

Q&A (see Questions in last issue)

ANSWERS

RAMTOP establishes the upper limit of usable or accesible memory. on start-up the computer will test for the amount of RAM in the system (2K or 16K) and set RAMTOP accordingly. You can change the setting of RAMTOP by POKEing addresses 16388 and 16389 with the desired RAMTOP in Low/High BIT format. RAMTOP is then set by entering the key-word NEW. Note that this will clear anything in your memory below RAMTOP.

```
POKE 16389,INT(ramtop/256)

POKE 16388,ramtop-(INT(ramtop/256)*256)
```

NOISE that can be heard at the beginning of a taped program are caused by ZX81 or TS1000 hardware interaction with the video display. Experiment with this by putting your machine in FAST mode and writing a short program as follows;

```
10 FOR N=1 TO 100
20 NEXT N
```

WHEN you run this while monitoring the audio, the noise will disapear. In FAST mode, the video display is not maintained while the program is running, hence no noise. Incidentally, when you save a program to tape, the computer goes into Temporary FAST mode for the duration of the save.

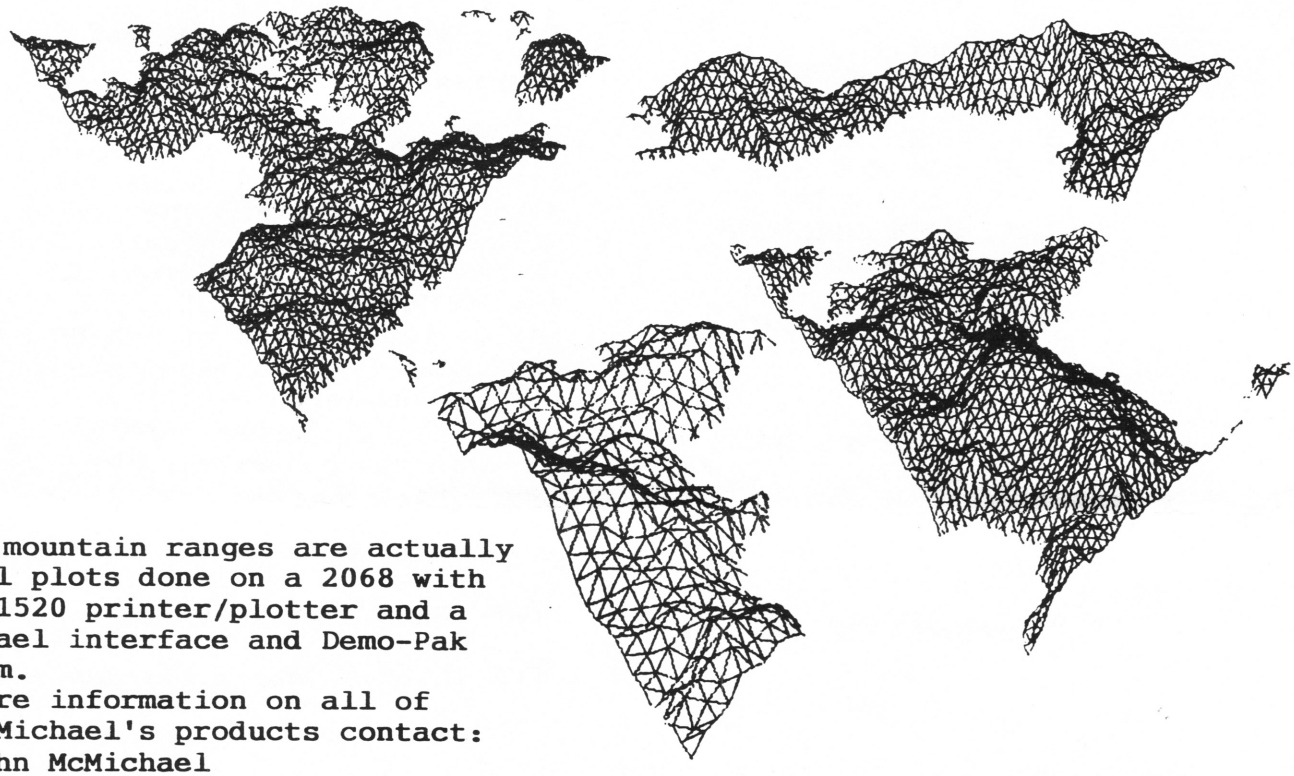
rb

WANTED WANTED WANTED WANTED

64K Rampack for TS1000/ZX81

Call Phil Hudsmith - 961-8785

or see Phil at club meeting.



These mountain ranges are actually fractal plots done on a 2068 with a VIC-1520 printer/plotter and a McMichael interface and Demo-Pak program.
For more information on all of Mr. McMichael's products contact:
Mr. John McMichael
1710 Palmer Drive,
Laramie, Wyoming, USA, 82070

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